REMARKS

Claims 1-27 are pending in this application. Claims 1, 5, 6, 10, 14, and 16 have been amended. These amendments do not add new matter.

Following the amendment, claims 1-27 remain with claims 1, 17 and 24 being independent.

Claims Rejections under 35 U.S.C. §112

Claim 5 is rejected under 35 U.S.C. §112, second paragraph. The Examiner asserts the claim is indefinite because the term "MIB" is not defined. As noted by the Examiner in paragraph 6 of the Office Action, the term "MIB" would be recognized by one of skill in the art to refer to a Management Information Base. Nonetheless, claim 5 is amended to indicate that modem information is provided through a standardized interface. Such a change is supported by the specification as filed, such as in the first paragraph on page 10. That paragraph describes that MIB is a standard that defines information available through an interface.

Brief Overview of the Application and References Cited

Prior to discussing the rejections based on prior art, Applicants provide a brief summary of the application as filed and of the Rekai reference. This summary is provide as an aide to the Examiner and is not intended to be a substitute for the Examiner's reading of the entire application or the reference. Additionally, this summary is not intended to characterize the claims or any language used in the claims. Specific discussion of the individual claims in relation to the rejections made in the outstanding Office Action are provided below.

Briefly, the present application relates to testing in the access portion of a broadband network. That system diagnoses problems on lines connecting subscribers to the broadband network so that the subscribers can receive data services. A specific example of such data services is DSL.

Figs. 1 and 2 of the present application illustrate an access network configuration that allows multiple subscribers to receive data services, such as DSL. Testing of the access network may occur at different times. Telephone companies and others who operate subscriber lines may investigate whether a subscriber line is suitable for a particular data service before using that subscriber line to connect a customer desiring that data service. Such testing in advance of use is sometimes referred to as "pre-qualification."

Even though a subscriber line may be pre-qualified for a data service, once a subscriber line is placed in service, it may have a service affecting condition, either because the pre-qualification was not accurate or because of changes to the subscriber line following the pre-qualification testing. Accordingly, operators of broadband networks may also use service assurance systems to check on the status of subscribers lines after they are placed in use.

The Rekai reference relates to a pre-qualification system. The intended application of Rekai as a pre-qualification system is apparent from the number of references in the document to performing tests "without employing any ADSL modem" (see paragraphs 6, 7, 8 and 38). In contrast, the present application describes a service assurance system that uses data from a modem.

The service assurance system described in the present application actually uses modem information for detecting service affecting conditions. For example, use of modem information is illustrated by Figs. 3A...3D, showing frequency versus bits/tone plots generated using data obtained by a modem. The present application teaches that modem information such as that depicted in Figs. 3A...3D may be used to identify service affecting conditions by recognizing patterns in that data. Fig. 4 depicts a specific process by which such patterns may be identified. As shown, data representing a bits/tone versus frequency plot for a specific subscriber line may be obtained (block 414) and analyzed (block 416) to identify a pattern characteristic of a service affecting condition.

Further, the present application teaches that the specific pattern representative of a service affecting condition may depend on electrical characteristics of the subscriber line. Accordingly, some embodiments of the present invention include both obtaining measurements of

electrical characteristics and information from a modem connected to the subscriber line. This information may be used in combination to identify a service affecting condition. The process of Fig. 4 is an example of such a process. In that process, measurements of electrical characteristics are used to estimate a length of the line (block 410), which is then used for selecting reference parameter data (block 412). The reference parameter data in turn affects the identification of a service affecting condition (block 416).

Because Rekai relates to pre-qualification testing, and specifically emphasizes testing without any modem, the present application, which relates to detecting service affecting conditions using a modem, is significantly different. As discussed in more detail in the following sections, these differences are reflected in the claims.

Claim Rejections under 35 U.S.C. §102

Claims 1-4 and 6-27 are rejected under 35 U.S.C. §102. The Examiner asserts those claims are anticipate by Rekai. Applicants respectfully disagree.

Applicants respectfully submit that Rekai, because it repeatedly emphasizes that testing is performed "without employing any ADSL modem," cannot teach or suggest a claim that recites "obtaining information from a modem."

Further, claim 1 as now amended recites "using in combination the measured electrical characteristics and the information from the modem to identify a service affecting condition." Though Rekai mentions in its Background section that tests performed using a modem were known, the reference contains no teaching or suggestion of "using in combination the measured electrical characteristics and the information from the modem to identify a service affecting condition."

Dependent claim 6, which is also rejected based on Rekai, further emphasizes the difference. Claim 6 qualifies the claimed step of "using in combination" to indicate that the measured electrical characteristics are used to determine a reference which is then used to identify a

service affecting condition by comparing the selected reference to the modem information. The other claims depending from claim 1 provide further reasons to distinguish the reference.

Independent claim 17 also recites "obtaining information from a modem." Accordingly, the method of claim 17 is not taught or suggested by Rekai because the reference emphasizes testing "without employing any ADSL modem." In addition, claim 17 recites limitations relating to the use of modem information, which further distinguishes the reference. Specifically, claim 17 recites that the information obtained from the modem concerns "the data transmission rate as a function of frequency." The claim further recites that the data is analyzed "to determine whether it contains a pattern indicative of a service affecting condition." Because Rekai provides no teaching relating to modem information, it can provide no teaching or suggestion of these additional limitations. Accordingly, the rejection of claim 17 should be withdrawn.

Dependent claims 18-23 are also rejected based on Rekai. For at least the reasons given in conjunction with claim 17, the rejections of claims 18-23 should be withdrawn.

Independent claim 24 is also rejected based on Rekai. Applicants respectfully disagree. Claim 24 recites "obtaining per-tone information from a modem." Rekai, which repeatedly emphasizes testing "without employing any ADSL modem," cannot teach or suggest this limitation. Other limitations of claim 24 further distinguish the reference. For example, the claim recites analyzing the information from the modem "to determine whether it contains a pattern indicative of a service affecting condition." Because there are multiple differences between the claim and the reference, the rejection of claim 24 should be withdrawn.

Claims 25-27 depend from claim 24 and should be allowed for at least the same reasons.

Rejections under 35 U.S.C. §103

Claim 5 was rejected under 35 U.S.C. §103. Though Applicants do not disagree that a Management Information Base is known, Applicants contend that using a Management Information Base as recited in the claim was not known. As described above in connection with claim 1, from

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which claim 5 depends, the prior art did not teach or suggest obtaining modem information. Accordingly, it could not teach or suggest obtaining that information through an MIB interface for the purpose of performing a method as recited in all the other limitations of the claim. Accordingly, there is no *prima facie* case of obviousness of claim 5 and the rejection should be withdrawn.

<center>*Conclusion*</center>

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Dated: February 15, 2007   Respectfully submitted,

By
Edmund J. Walsh
Registration No.: 32,950
WOLF, GREENFIELD & SACKS, P.C.
Federal Reserve Plaza
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
(617) 646-8000

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